FIG. 1

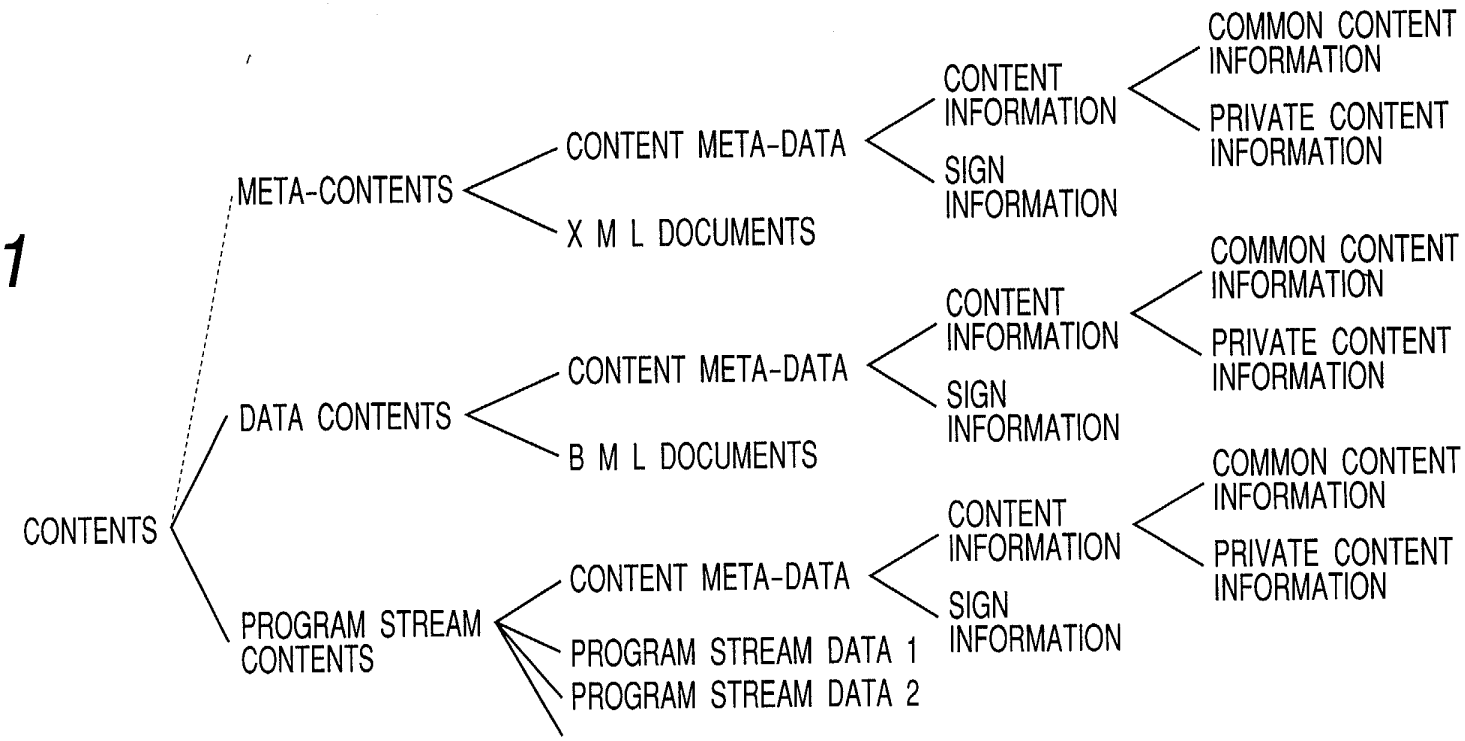
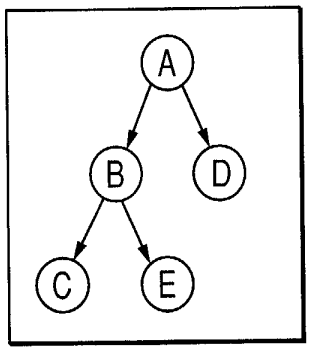


FIG. 2



US-01026-TS

FIG. 3

```
<!ELEMENT Service CompInfo public_key, (storage_id_info)*,(element_service)+,
        (storage_info)*>
<!ELEMENT public_key, EMPTY>
<!ELEMENT element_service (content_group)+, (storage_id_info)*>
<!ELEMENT content_group (storage_id_info)*>
<!ELEMENT storage_id_info EMPTY>
<!ELEMENT storage_info (ird_level_list)*>
<!ELEMENT ird_level_list (storage_id_list)*>
<!ATTLIST ServiceCompInfo
info_major_version              PCDATA   #REQUIRED
info_minor_version              PCDATA   #REQUIRED
information_provider_id         ID_NUM   #REQUIRED
information_provider_name       CDATA    #REQUIRED
information_provider_char       CDATA    #REQUIRED
work_area_size                  PCDATA   #REQUIRED
first_bml                       ID_NUM   #REQUIRED
>
<!ATTLIST public_key
version                  PCDATA   #REQUIRED
key                      PCDATA   #REQUIRED
limit                    DATE     #REQUIRED
>
<!ATTLIST element_service
element_service_id       ID_NUM   #REQUIRED
element_service_name     CDATA    #IMPLIED
element_service_char     CDATA    #IMPLIED
first_bml                ID_NUM   #IMPLIED
schedule_info            (ON/OFF) OFF
>
<!ATTLIST content_group
content_group_id         ID_NUM   #REQUIRED
content_group_name       CDATA    #REQUIRED
content_group _char      CDATA    #REQUIRED
first_bml                ID_NUM   #IMPLIED
>
<!ATTLIST storage_id_info
storage_id          ID-NUM      #REQUIRED
>
<!ATTLIST ird_level_list
ird_level                PCDATA   #REQUIRED
>
<!ATTLIST storage_id_list
storage_id               ID_NUM      #REQUIRED
storage_policy           (0/1/2/3/4) 0
exclusive_storage _av    PCDATA   #REQUIRED
exclusive_storage _data  PCDATA   #REQUIRED
>
```

FIG. 4

```
<!ELEMENT ScheduleInfo (content_info)*, (next_schedule)*>
<!ELEMENT content_info (schedule)+, (filtering_pattern)+>
<!ELEMENT schedule_list (schedule)+>
<!ELEMENT next_schedule (schedule)+>
<!ATTLIST ScheduleInfo
info_major_version          PCDATA   #REQUIRED
info_minor_version          PCDATA   #REQUIRED
information_provider_id  ID_NUM      #REQUIRED
element_service_id       ID_NUM      #REQUIRED
>
<!ATTLIST content_info
element_content_id       ID_NUM      #REQUIRED
content_major_version       PCDATA      #REQUIRED
content_minor_version       PCDATA      #REQUIRED
data_type             (STREAM/FILE) #IMPLIED
content_size          CDATA  #IMPLIED
>
<!ATTLIST schedule_list
transport_stream_id      ID_NUM      #REQUIRED
original_network_id      ID_NUM      #REQUIRED
service_id               ID_NUM      #REQUIRED
>
<!ATTLIST schedule
start_time            DATE      #REQUIRED
duration              PCDATA  #REQUIRED
>
<!ATTLIST filtering_pattern
layer                 (1/2)       #REQUIRED
def_version           PCDATA   #REQUIRED
fieldID               ID_NUM #REQUIRED
info_version          PCDATA   #REQUIRED
pattern               CDATA    #REQUIRED
>
<!ATTLIST next_schedule
transport_stream_id      ID_NUM      #REQUIRED
original_network_id      ID_NUM      #REQUIRED
service_id               ID_NUM      #REQUIRED
>
```

FIG. 5

COMMON CONTENT INFORMATION

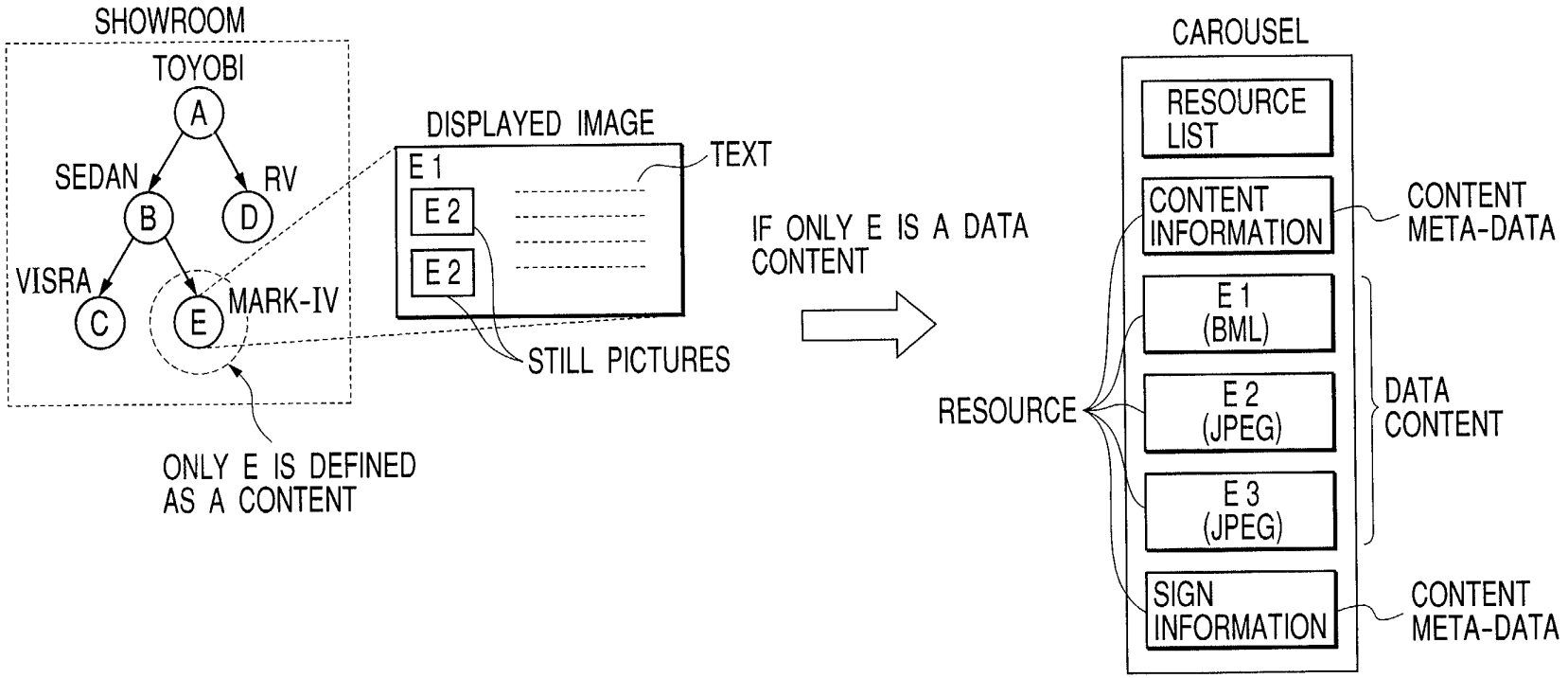
```
<!ELEMENT CommonInfo (comp_info+)>
<!ELEMENT comp_info (comp_content+)>
<!ELEMENT comp_content EMPTY>
<!ATTLIST commonInfo
information_provider_id  ID_NUM    #REQUIRED
service_type             (0/1/2/3/4) #REQUIRED
element_service_id       ID_NUM    #REQUIRED
content_group_id         ID_NUM    #REQUIRED
storage_id               ID_NUM    #IMPLIED
major_version            PCDATA    #REQUIRED
minor_version            PCDATA    #REQUIRED
activation_time          DATE      #IMPLIED
expire_time              DATE      #REQUIRED
expire_policy            (0/1)     0
>
<!ATTLIST comp_info
ird_level                PCDATA    #REQUIRED
limit                    DATE      #REQUIRED
>
<!ATTLIST comp_content
element_content_id  ID_NUM  #REQUIRED
necessary           (ON/OFF) OFF
>
```

FIG. 6

PRIVATE CONTENT INFORMATION

```
<!ELEMENT PrivateInfo (ird_level_list)* (filtering_pattern)*>
<!ELEMENT ird_level_list (ird_level_info)+>
<!ELEMENT ird_level_info EMPTY>
<!ATTLIST PrivateInfo
element_content_id      ID_NUM #REQUIRED
content_major_version   PCDATA  #REQUIRED
content_minor_version   PCDATA  #REQUIRED
first_bml_flag            (yes/no) no
activation_time         DATE    #IMPLIED
expire_time             DATE    #IMPLIED
expire_policy           (0/1) 0
data_type               (STREAM/FILE) #IMPLIED
content_size            CDATA   #IMPLIED
>
<!ATTLIST ird_level_info
ird_level               PCDATA  #REQUIRED
>
<!ATTLIST filtering_pattern
filter_type             (primary/secondary)     #REQUIRED
def_version             PCDATA  #REQUIRED
FieldID                 ID_NUM  #REQUIRED
info_version            PCDATA  #REQUIRED
pattern                 CDATA   #REQUIRED
>
```

FIG. 7


SHOWROOM
TOYOBI
A
SEDAN
RV
B
D
VISRA
MARK-IV
C
E
ONLY E IS DEFINED AS A CONTENT
DISPLAYED IMAGE
E 1
E 2
E 2
TEXT
STILL PICTURES
IF ONLY E IS A DATA CONTENT
CAROUSEL
RESOURCE LIST
CONTENT INFORMATION
CONTENT META-DATA
E 1 (BML)
E 2 (JPEG)
E 3 (JPEG)
DATA CONTENT
RESOURCE
SIGN INFORMATION
CONTENT META-DATA

FOCTTP OTSOTEO

FIG. 8

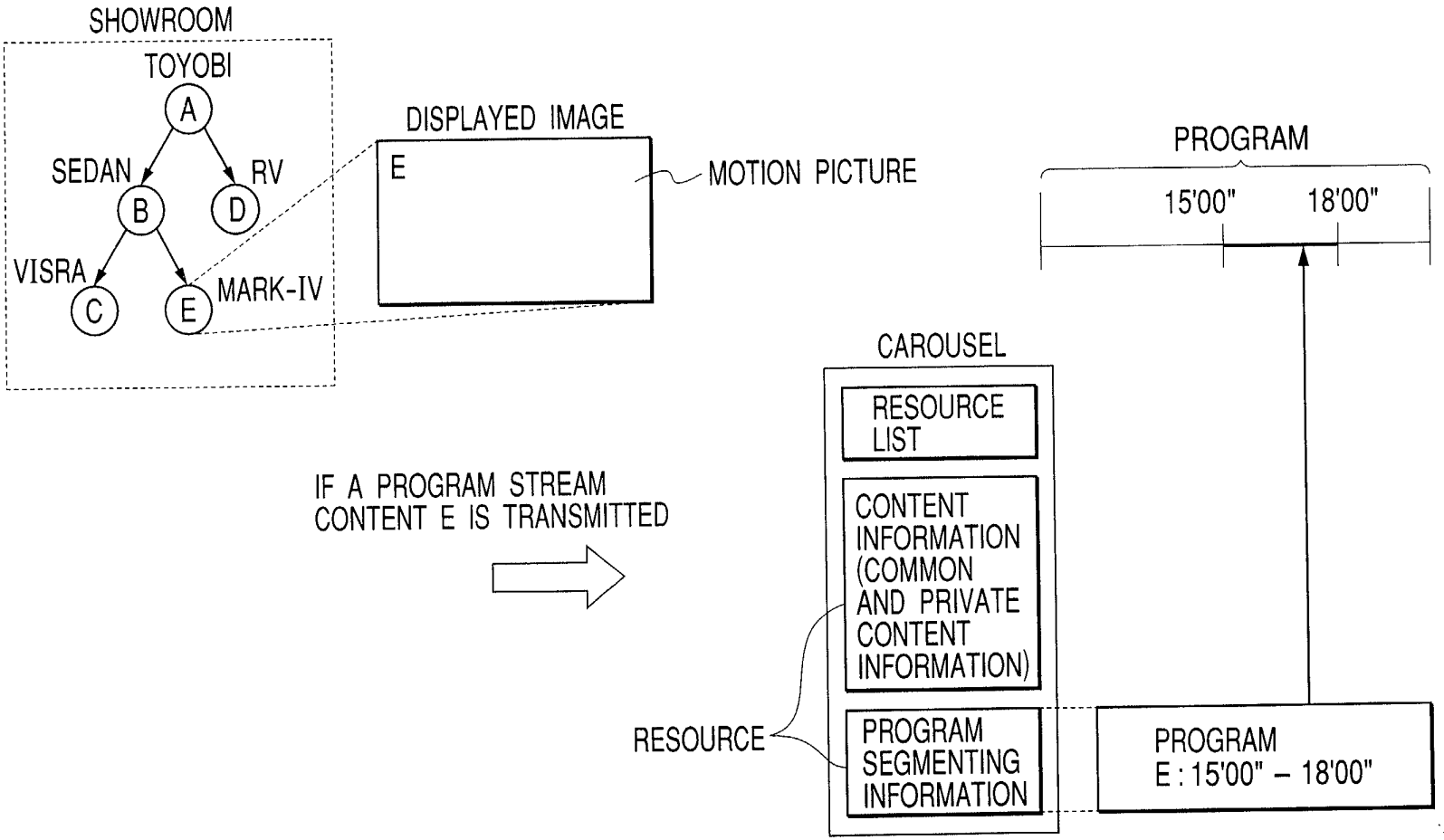


FIG. 9

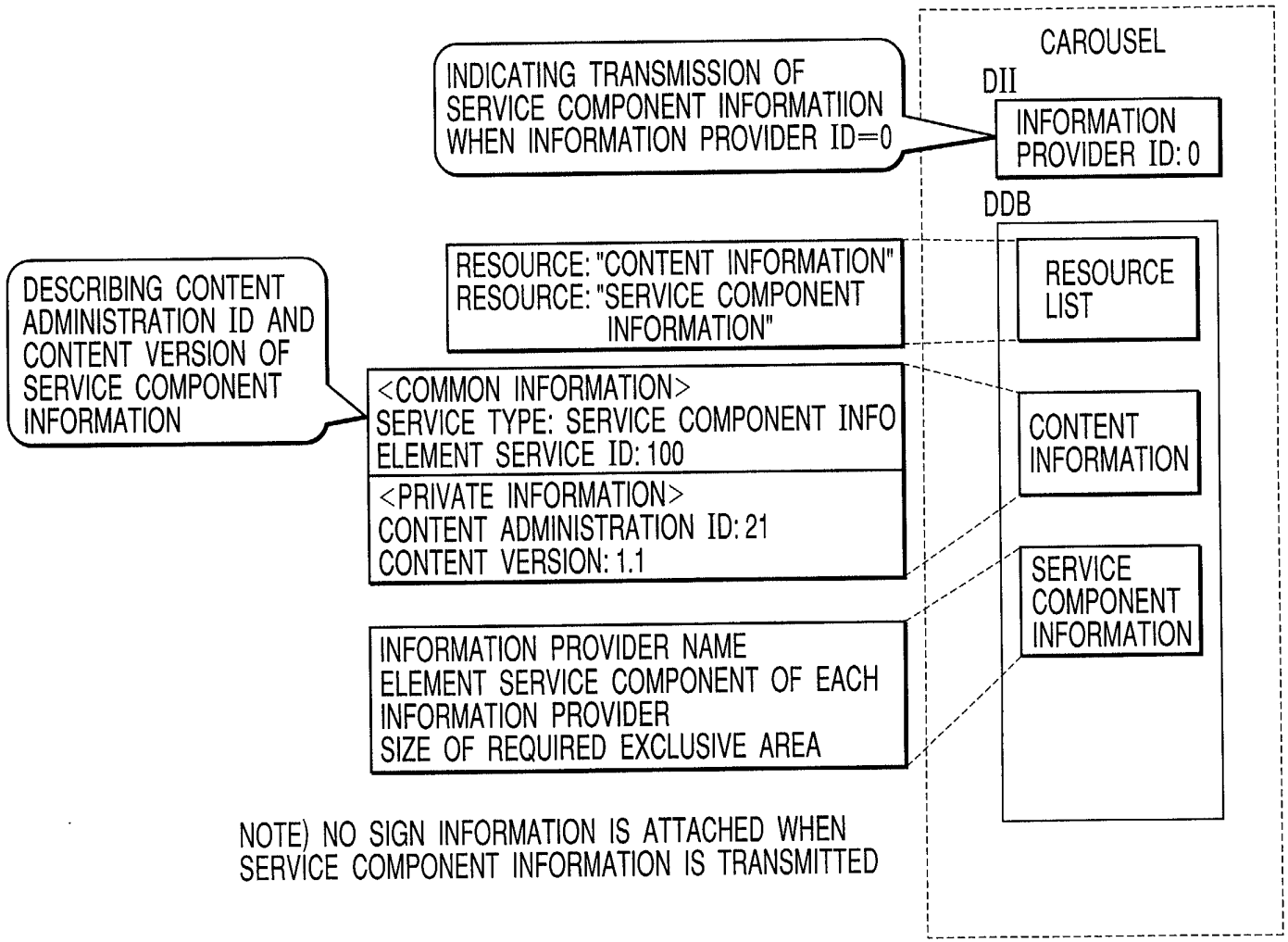

CAROUSEL
DII
INFORMATION PROVIDER ID: 0
INDICATING TRANSMISSION OF SERVICE COMPONENT INFORMATIION WHEN INFORMATION PROVIDER ID=0
DDB
RESOURCE LIST
RESOURCE: "CONTENT INFORMATION"
RESOURCE: "SERVICE COMPONENT INFORMATION"
DESCRIBING CONTENT ADMINISTRATION ID AND CONTENT VERSION OF SERVICE COMPONENT INFORMATION
<COMMON INFORMATION>
SERVICE TYPE: SERVICE COMPONENT INFO
ELEMENT SERVICE ID: 100
CONTENT INFORMATION
<PRIVATE INFORMATION>
CONTENT ADMINISTRATION ID: 21
CONTENT VERSION: 1.1
SERVICE COMPONENT INFORMATION
INFORMATION PROVIDER NAME
ELEMENT SERVICE COMPONENT OF EACH INFORMATION PROVIDER
SIZE OF REQUIRED EXCLUSIVE AREA
NOTE) NO SIGN INFORMATION IS ATTACHED WHEN SERVICE COMPONENT INFORMATION IS TRANSMITTED

FIG. 10

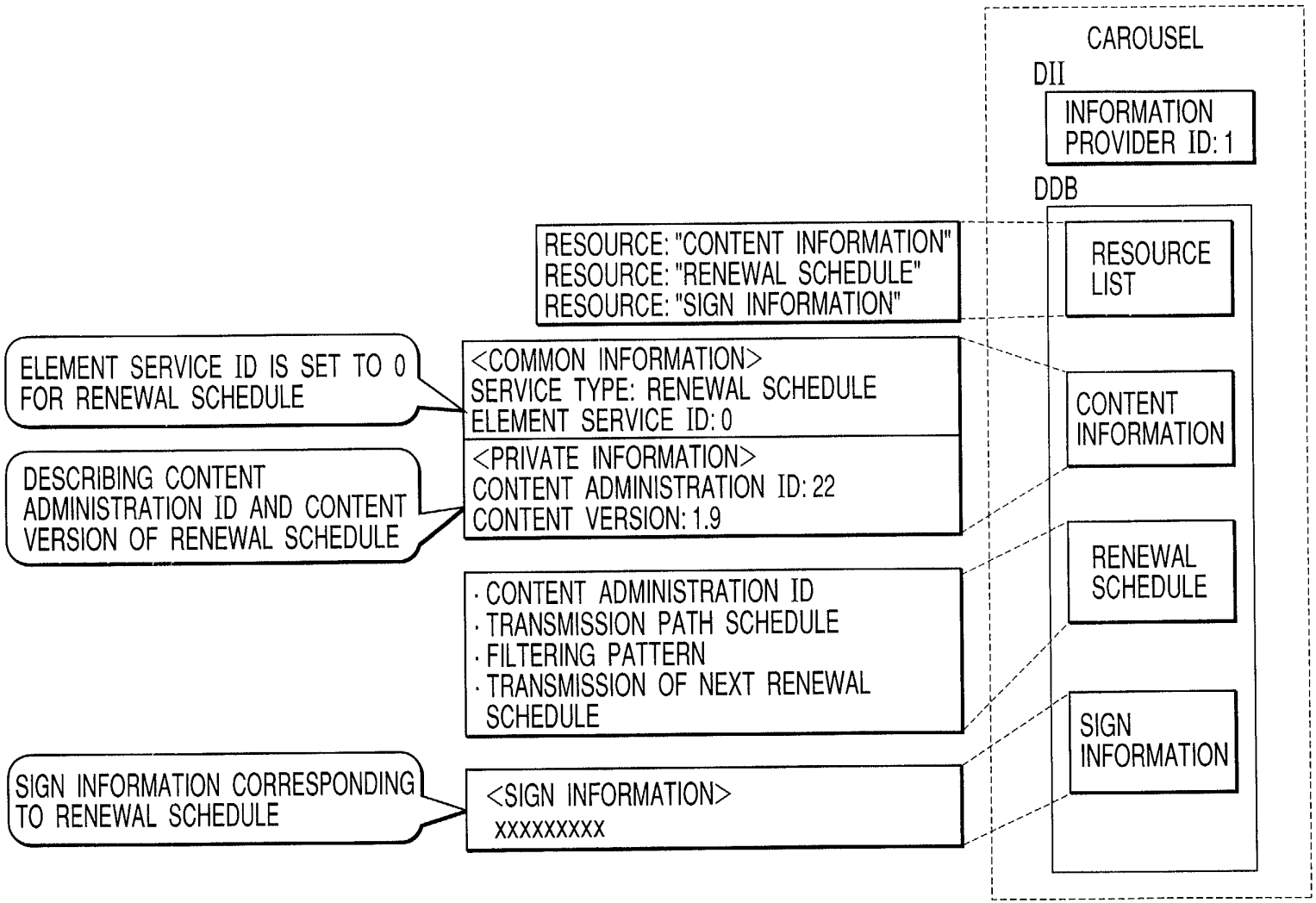

CAROUSEL
DII
INFORMATION PROVIDER ID: 1
DDB
RESOURCE: "CONTENT INFORMATION"
RESOURCE: "RENEWAL SCHEDULE"
RESOURCE: "SIGN INFORMATION"
RESOURCE LIST
ELEMENT SERVICE ID IS SET TO 0 FOR RENEWAL SCHEDULE
<COMMON INFORMATION>
SERVICE TYPE: RENEWAL SCHEDULE
ELEMENT SERVICE ID: 0
DESCRIBING CONTENT ADMINISTRATION ID AND CONTENT VERSION OF RENEWAL SCHEDULE
<PRIVATE INFORMATION>
CONTENT ADMINISTRATION ID: 22
CONTENT VERSION: 1.9
CONTENT INFORMATION
· CONTENT ADMINISTRATION ID
· TRANSMISSION PATH SCHEDULE
· FILTERING PATTERN
· TRANSMISSION OF NEXT RENEWAL SCHEDULE
RENEWAL SCHEDULE
SIGN INFORMATION CORRESPONDING TO RENEWAL SCHEDULE
<SIGN INFORMATION>
xxxxxxxxx
SIGN INFORMATION

FIG. 11A

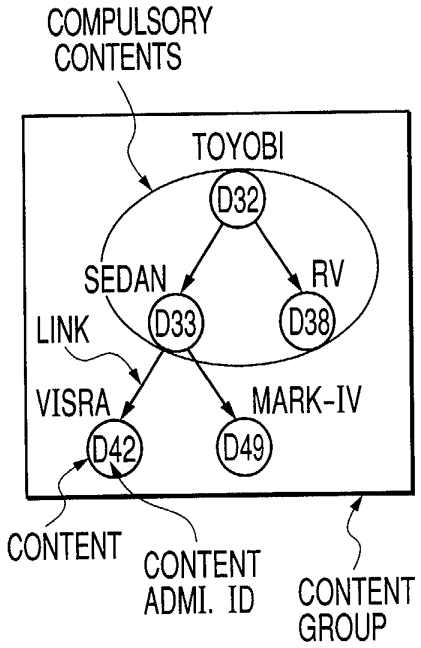


FIG. 11B

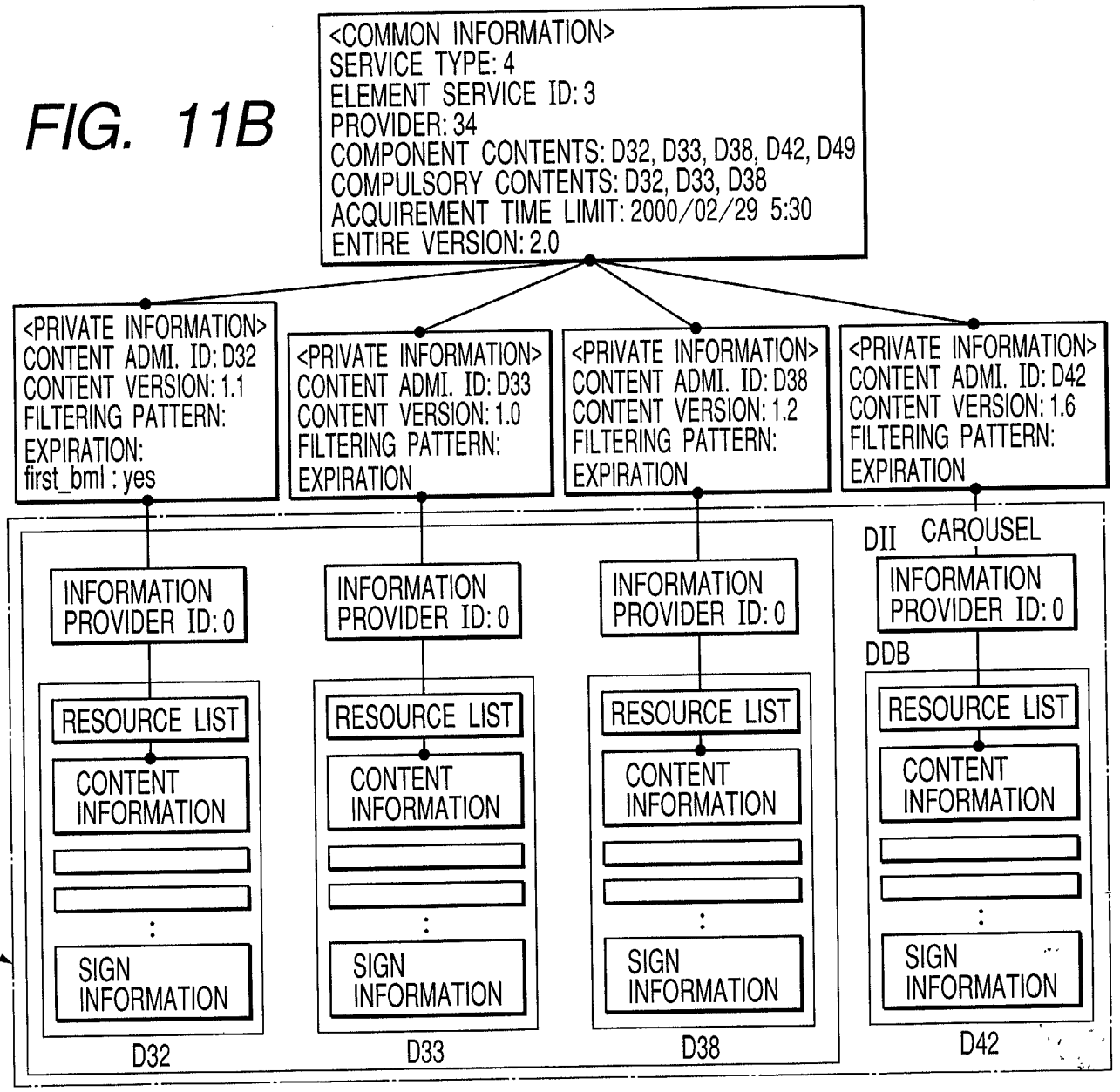


FIG. 12

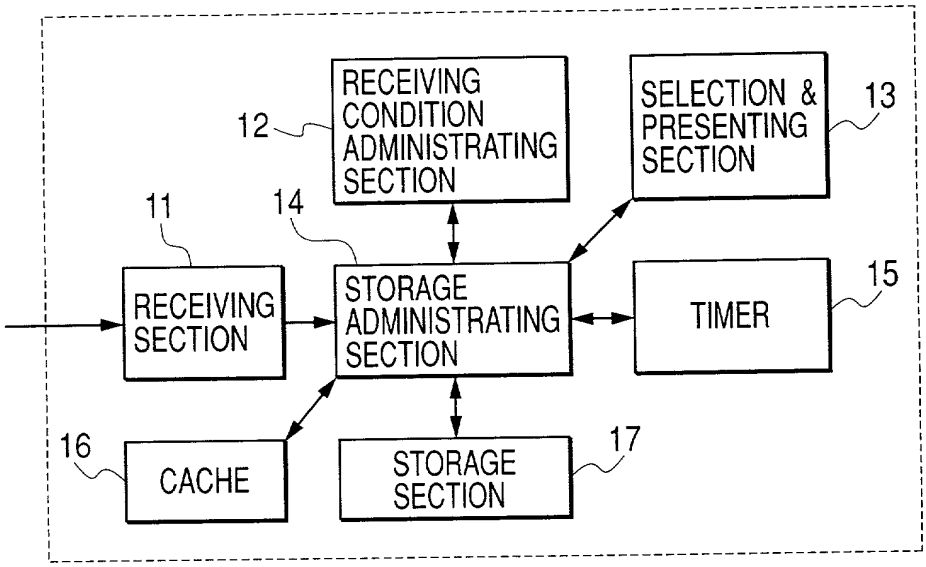

RECEIVING CONDITION ADMINISTRATING SECTION
12
SELECTION & PRESENTING SECTION
13
11
14
RECEIVING SECTION
STORAGE ADMINISTRATING SECTION
TIMER
15
16
CACHE
STORAGE SECTION
17

FIG. 13

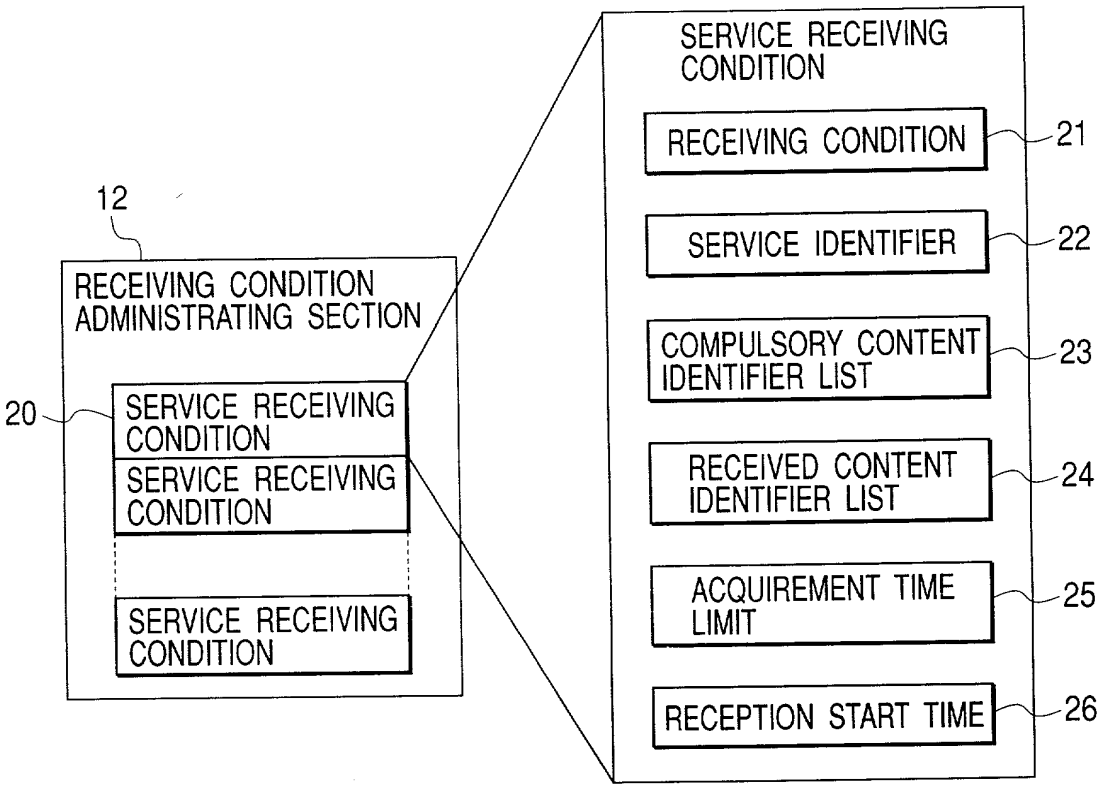

12
RECEIVING CONDITION ADMINISTRATING SECTION
20
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
SERVICE RECEIVING CONDITION
RECEIVING CONDITION
21
SERVICE IDENTIFIER
22
COMPULSORY CONTENT IDENTIFIER LIST
23
RECEIVED CONTENT IDENTIFIER LIST
24
ACQUIREMENT TIME LIMIT
25
RECEPTION START TIME
26

FIG. 14A

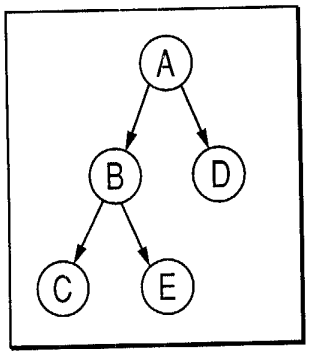


FIG. 14B

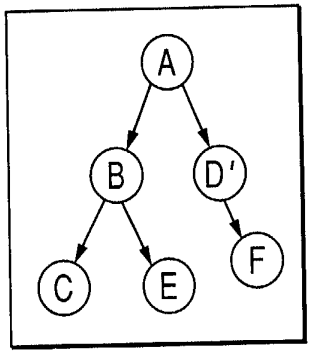


FIG. 14C

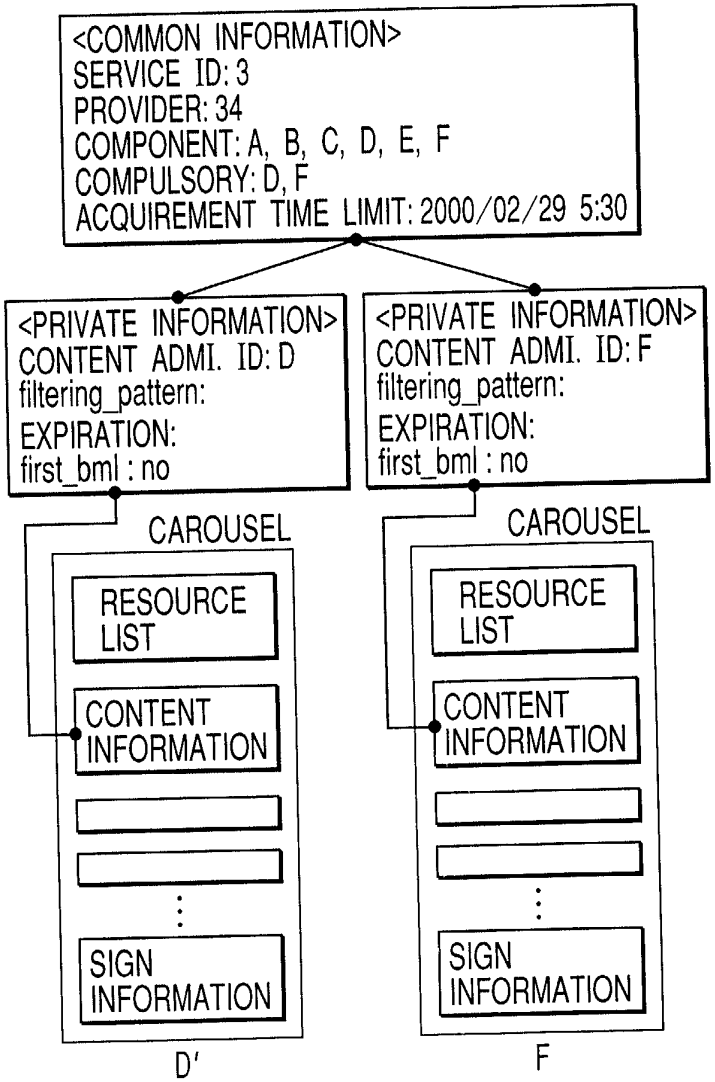
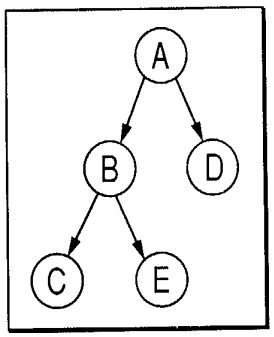


FIG. 15A FIG. 15B



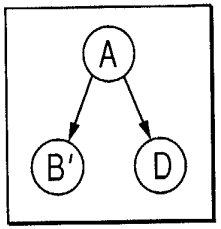


FIG. 15C

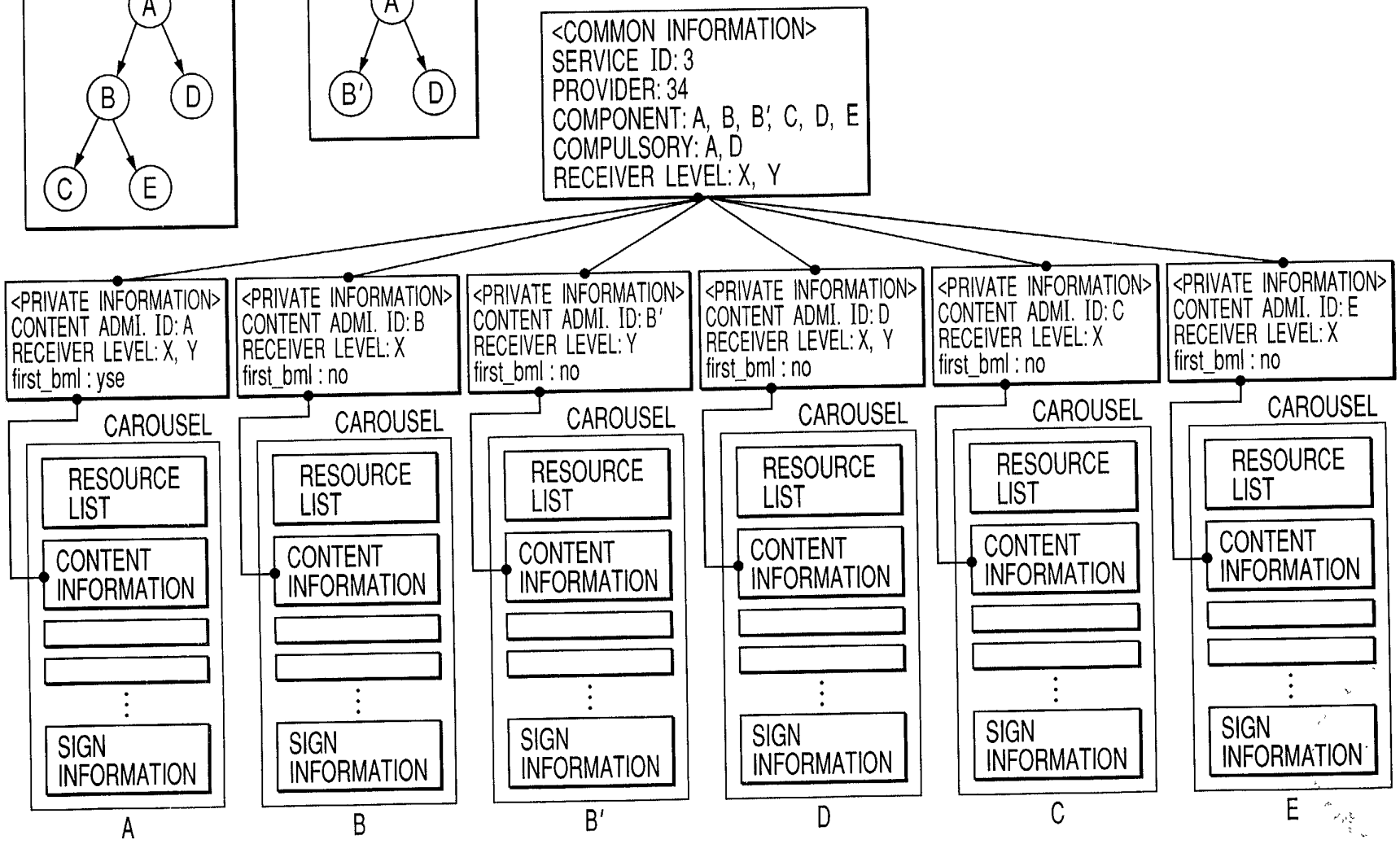


FIG. 16

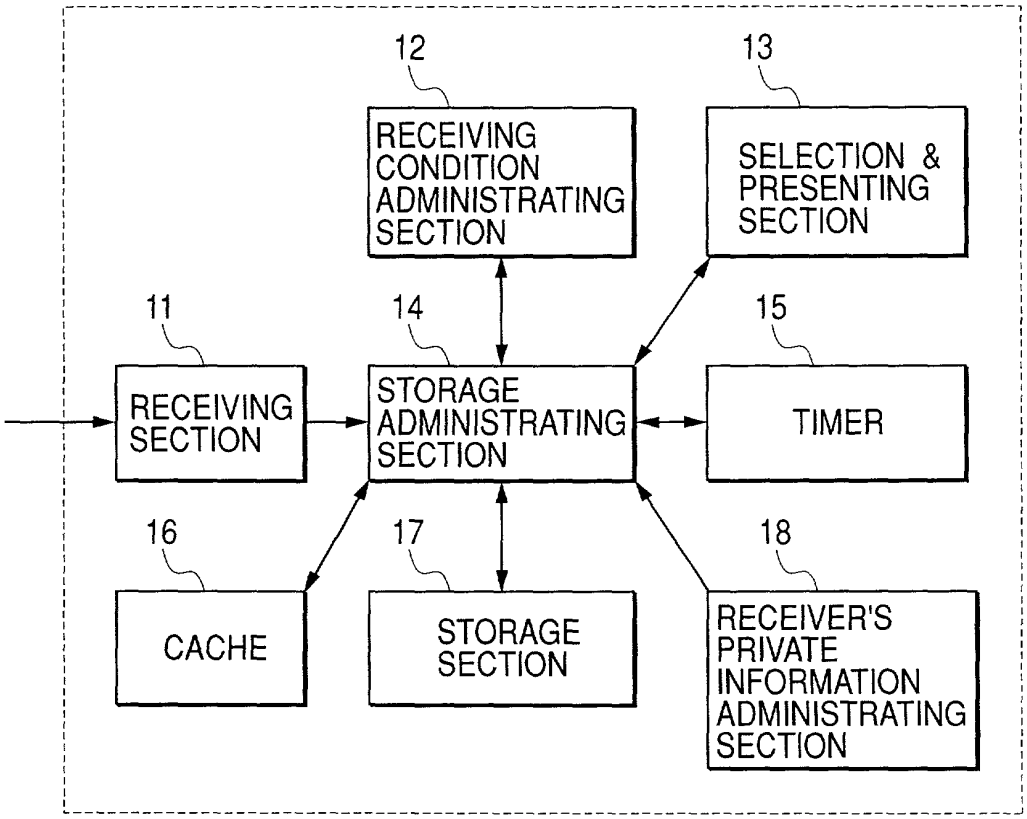

12
RECEIVING CONDITION ADMINISTRATING SECTION
13
SELECTION & PRESENTING SECTION
11
RECEIVING SECTION
14
STORAGE ADMINISTRATING SECTION
15
TIMER
16
CACHE
17
STORAGE SECTION
18
RECEIVER'S PRIVATE INFORMATION ADMINISTRATING SECTION

FIG. 17

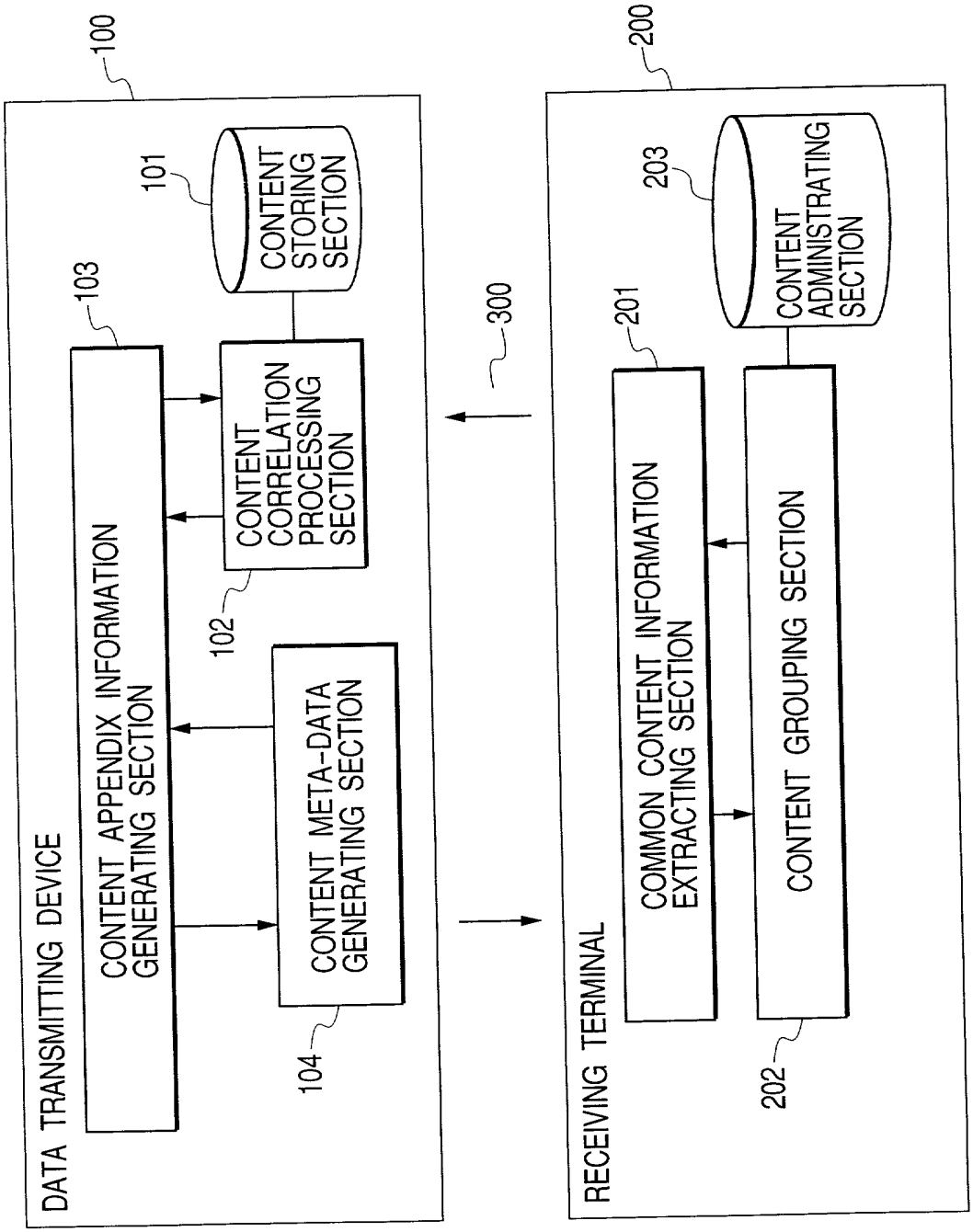

100
DATA TRANSMITTING DEVICE
CONTENT APPENDIX INFORMATION GENERATING SECTION
103
CONTENT META-DATA GENERATING SECTION
104
CONTENT CORRELATION PROCESSING SECTION
102
CONTENT STORING SECTION
101
300
200
RECEIVING TERMINAL
COMMON CONTENT INFORMATION EXTRACTING SECTION
201
CONTENT GROUPING SECTION
202
CONTENT ADMINISTRATING SECTION
203

FIG. 18A

DATA TRANSMITTING OPERATION

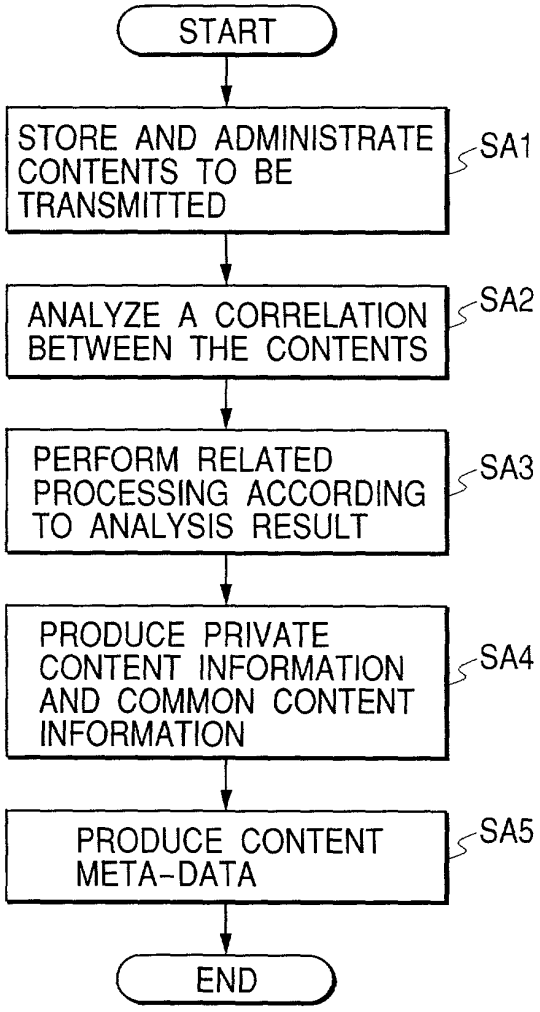


FIG. 18B

DATA RECEIVING OPERATION

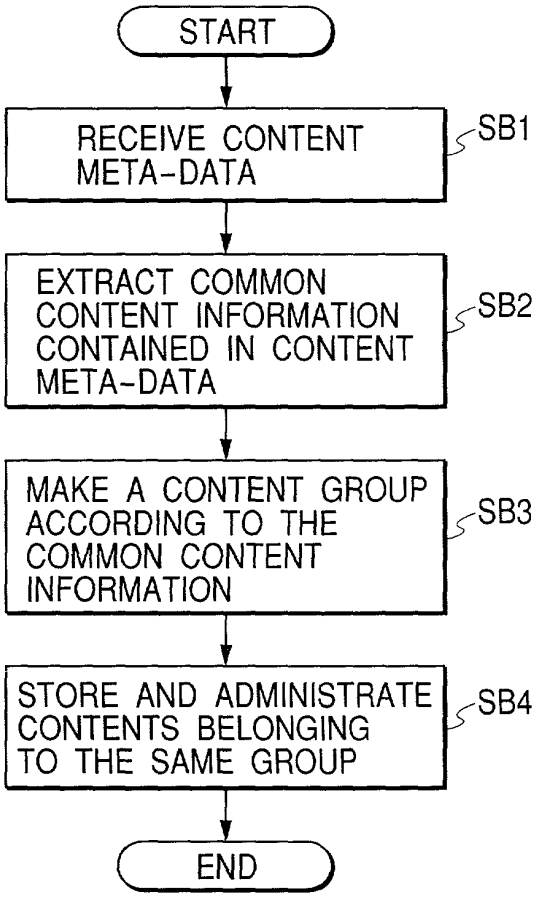


FIG. 19

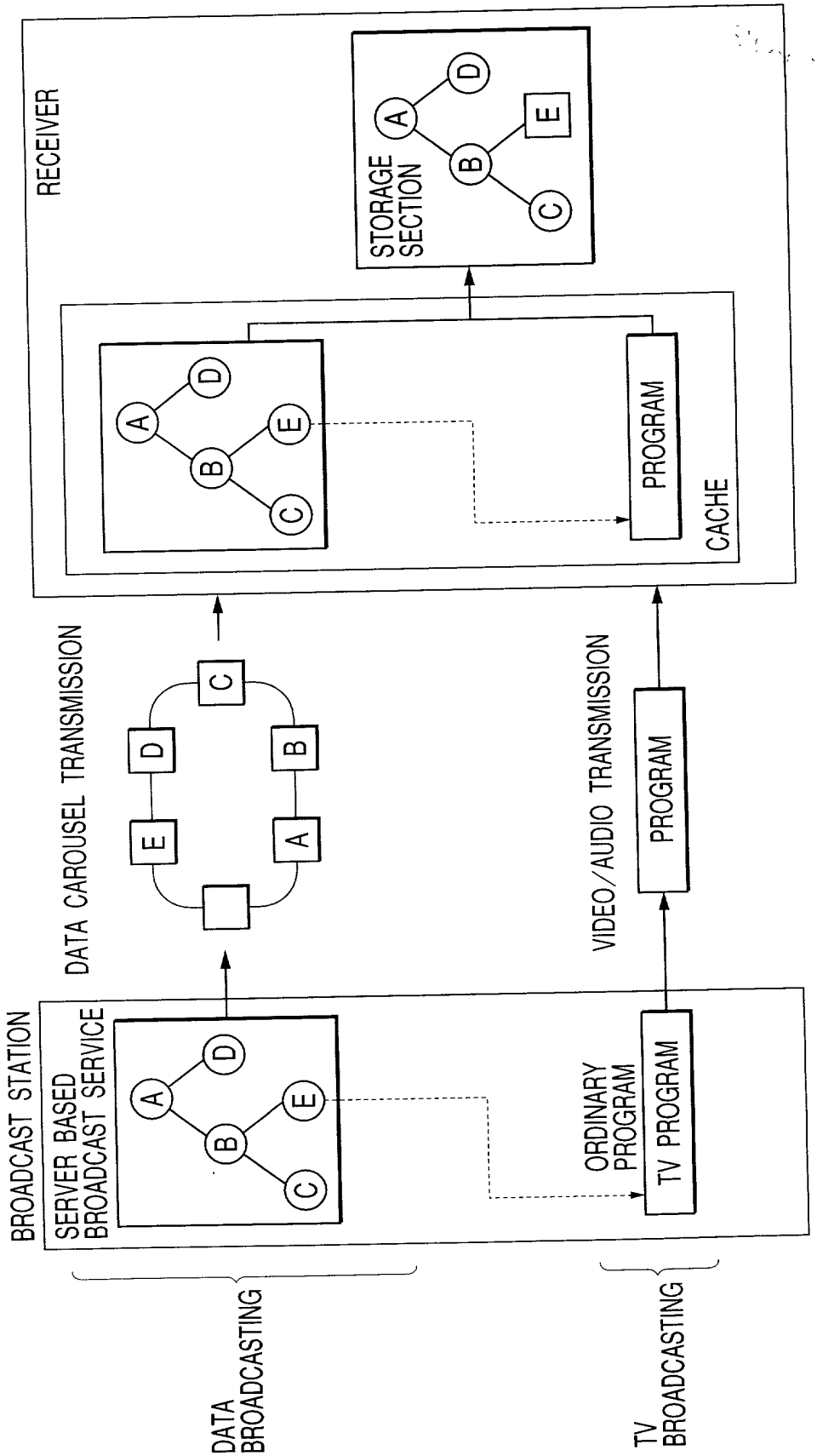

RECEIVER
STORAGE SECTION
A
B
C
D
E
PROGRAM
CACHE
DATA CAROUSEL TRANSMISSION
VIDEO/AUDIO TRANSMISSION
PROGRAM
BROADCAST STATION
SERVER BASED BROADCAST SERVICE
ORDINARY PROGRAM
TV PROGRAM
DATA BROADCASTING
TV BROADCASTING

FIG. 20A

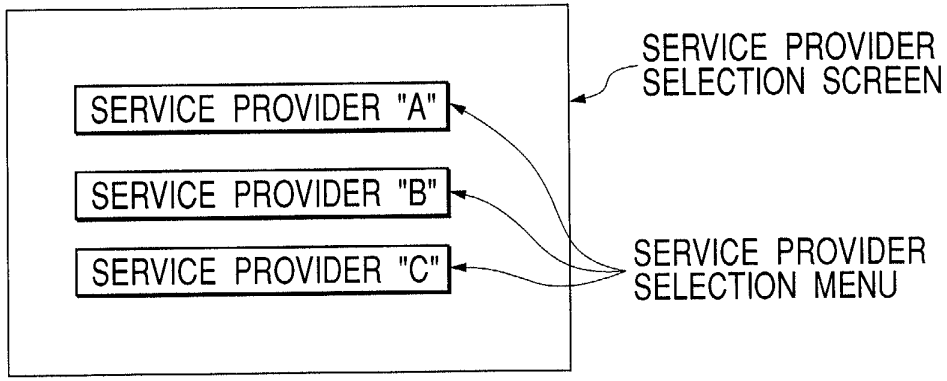
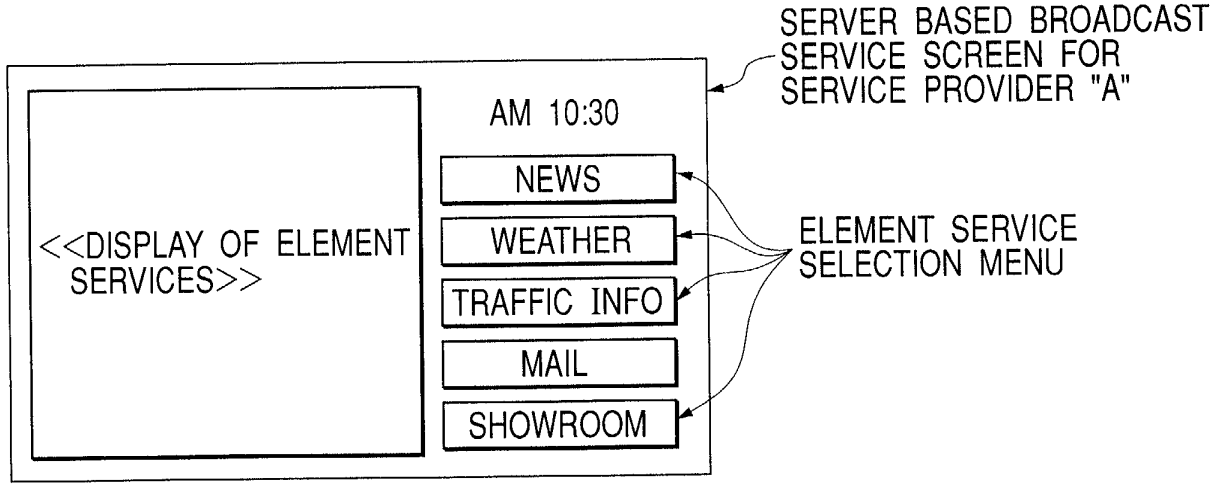



FIG. 20B